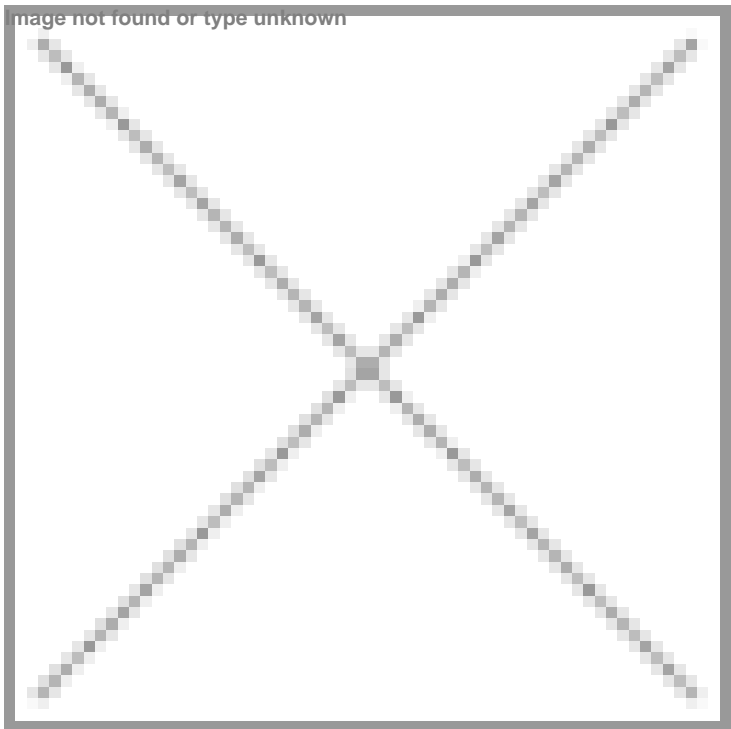# AI fuels new era of cancer detection

31 January 2026 | Features | By Vrushti Kothari

As the world stands at the cusp of the Artificial Intelligence (AI) revolution, the Indian government has established regulatory guidelines for AI driven cancer detection and diagnostic software, categorising it alongside medical devices. These new regulations will require AI-based cancer detection tools, currently in use at various hospitals and diagnostic centres, to secure regulatory approval before widespread deployment. Simultaneously, India is experiencing a surge in startups offering AI-driven cancer screening solutions, often touting early-detection capabilities. Let's find out how these new regulatory developments can foster innovations to combat cancer in the long run.

Cancer continues to be a significant health issue in the country, which demands the invention of new methods for early detection, precise diagnosis, and personalised treatments. And artificial intelligence (AI) is rapidly becoming a groundbreaking component in the modern era of oncology, offering sophisticated tools across the range of cancer detection and care.

As World Cancer Day is marked every year on February 4, it becomes pertinent to focus on the new developments taking place within the country to address this growing healthcare burden.

According to the Indian Council of Medical Research (ICMR), 15.7 lakh new cancer cases were apparently reported in India in 2025. This projection indicates a 12.8 per cent increase in cancer incidence compared to levels seen in 2020. Reports have also suggested that India's lung cancer burden is projected to rise sharply by 2030, with the North-East emerging as the worst-affected region and women recording the fastest increase in cases. Additionally, a recent study warns that breast cancer cases in India are expected to climb by 5.6 per cent every year.

As a result, we are now seeing a huge increase in technology deployment, especially the use of AI, across public and private sectors for early detection of cancer, to bring down this number as much as possible. India's first government-run artificial intelligence (AI) clinic was recently inaugurated at the Government Institute of Medical Sciences (GIMS) in Greater Noida, marking a major step in integrating cutting-edge technology into public healthcare, to enhance early disease detection of cancer and other diseases.

IndiaAI Independent Business Division (IBD), in collaboration with the National Cancer Grid (NCG), has launched the Cancer AI & Technology Challenge (CATCH) Grant Programme to support the development and deployment of innovative AI solutions to strengthen cancer screening, diagnostics, treatment support, and healthcare operations across India. The CATCH Grant Programme is providing up to Rs 50 lakh per project to selected teams comprising technology innovators and clinical institutions. Successful pilot projects may also be eligible for an additional scale-up grant of up to Rs 1 crore, facilitated by IndiaAI.

The Department of Biotechnology (DBT) and Biotechnology Industry Research Assistance Council (BIRAC) are supporting the establishment of Bio-AI Hubs, which focus on interdisciplinary collaborations to develop AI-guided platforms for cancer research, diagnosis and treatment. These hubs aim to improve scientific discoveries, optimise processes, and enhance decision-making in the field of cancer treatment.

Although AI shows promise for improving cancer screening and diagnosis, its adoption and understanding have often turned out to be challenging. For instance, the lack of large, representative datasets specific to India has hindered AI's readiness for routine clinical application.

Dr Jitendra Kumar, Managing Director, Biotechnology Industry Research Assistance Council (BIRAC) said, "AI must be leveraged to deepen core scientific capabilities before being widely deployed in public-facing healthcare applications. Premature use of AI in direct patient interfaces must be done cautiously, as misinterpretation, misuse and varying levels of public health literacy could undermine trust in both technology and healthcare systems. AI should act as an enabler for scientists, clinicians and manufacturers rather than a replacement, and robust validation frameworks are essential before large-scale deployment."

In order to address such challenges, the Central Drugs Standard Control Organisation (CDSCO) has now brought artificial intelligence driven cancer detection and diagnostic software under its regulatory oversight, placing it on par with medical devices. Such proactive approaches to regulation can stand to benefit both patients and developers, particularly the startups and scientists that are developing novel AI-based solutions for early cancer detection.

"AI-driven startups are pivotal in addressing India's cancer burden by democratising expertise. In a country facing a chronic specialist shortage, AI empowers clinicians in Tier-2 and Tier-3 cities with metro-level diagnostic accuracy, facilitating early-stage detection where survival rates are highest. However, the path forward involves navigating regulatory and data challenges. Classifying AI-powered diagnostic software as Class C medical devices is a critical step; it ensures clinical validity and patient safety while building the trust required for large-scale hospital adoption", said **Chirag Adatia, Partner, Health and Life Sciences and Private Capital Practices, Oliver Wyman**.

He further added, "By creating compounding returns across the healthcare value chain, from improved hospital utilisation to better actuarial outcomes for insurers, AI-driven diagnostics are not just improving survival rates; they are making the India healthcare system more economically resilient."

Rise of intelligent cancer diagnosis

The emergence of oncology-focused AI startups in India is marking a significant chapter in the ongoing battle against cancer. By harnessing the power of technology, these innovators are reshaping the way we used to look at the oncology landscape earlier. Experts suggest that the AI-based cancer diagnostics market in India is projected to reach $41.4 million by 2030, where startups are likely to hold a major share.

Mumbai-based startup Qure.ai is currently utilising deep learning algorithms to analyse medical imaging, enabling faster and more accurate lung cancer detection. The company has recently joined hands with the global player Johnson & Johnson MedTech, to establish AI-led Incidental Pulmonary Nodule (IPN) detection clinics across leading hospitals in India.

"AI helps to overcome healthcare bottlenecks, from imaging reporting backlogs and low screening uptakes. The future belongs to proactive, AI-enabled health systems that can scale care without compromising quality. AI isn't here to replace humans, it's here to amplify human judgment, deliver faster insights, and ultimately make healthcare more equitable", said **Prashant Warier, Founder and CEO of Qure.ai**.

Emerging as a game-changer in cancer diagnostics is Bengaluru-based startup SigTuple's AI100, an AI-driven smart robotic microscope. It automates the microscopic analysis of biological samples, including blood and urine, and delivers results in minutes. This technology has received US FDA approval for its blood smear application, making it the first Indian company to achieve this milestone. The company has forged crucial partnerships with diagnostic labs to secure annotated data, and with distribution partners like Horiba India, leveraging established networks for market penetration.

At the other end, Punjab government has launched first-of-its-kind AI-enabled screening devices for early detection of breast cancer and cervical cancer, in partnerships with startups such as Niramai and Periwinkle.

Within Punjab, RNT Health Insights is specialising in AI-assisted diagnostic solutions for the accurate detection of pathologies during endoscopic procedures. The startup has recently received US FDA Breakthrough Device Designation for its oesophageal cancer and gastric cancer detection tools.

Adding to this list is Dr. Lal Path Labs that has made a significant leap in cancer diagnostics by adopting a deep learning-based AI module to detect lymph node metastasis, including micrometastasis, in cancer cases, in collaboration with Singapore-based startup Qritive.

"India has the potential to become a global hub for AI-driven medical devices and diagnostics. AI is enabling earlier, more accurate, and more accessible detection of disease, reshaping preventive and precision medicine in India. AI tools can detect subtle abnormalities critical for cancer. In endoscopy, AI has significantly improved adenoma detection rates, lesion characterisation, and early cancer diagnosis", said **Koji Wada, Managing Director (Healthcare Division), Fujifilm India**.

Delhi-based startup Primary Healthtech has recently received support from Technology Development Board (TDB), Department of Science and Technology, Government of India, to build an AI-based point-of-care blood testing device for detecting cancer and other diseases.

Around similar lines, researchers at the Indraprastha Institute of Information Technology (IIIT), Delhi, have developed cutting-edge artificial intelligence tools that can detect cancer at an early stage using a simple blood test. The test is based on Tumour Educated Platelets (TEPs), which carry molecular information altered by the presence of cancer. Using AI, the test can identify multiple cancer types from a small blood sample, offering a cost-effective alternative to invasive and expensive diagnostic procedures.

"AI models have been shown to detect up to 13 different cancers with over 98 per cent accuracy in controlled studies when analysing tissue patterns that the human eye would find difficult to quantify. For India, the opportunity is particularly profound. With a large and diverse population and a limited number of specialists, AI can help bridge gaps by streamlining imaging interpretation and pathology analysis, reducing reporting times, and enabling remote diagnostics in areas with few specialists", said **Dr Mayanka Lodha Seth, Chief Pathologist, Redcliffe Labs.**

With these developments taking place in India, AI is no longer a secondary adjunct in oncology, it is becoming an essential, intrinsic component in advancing cancer detection. With regulatory frameworks for AI in cancer diagnostics taking shape now, there is an urgent need to unite AI researchers, oncologists and regulators to create transparent, and clinically valuable AI deployment standards, so that AI can usher in a transformative era within the oncology landscape.

Vrushti Kothari

(vrushti.kothari@mmactiv.com)